

WOSER, K.

Tasks in developing iron-ore mining in Rudabanya. p. 635. Vol 10, no. 12, Dec. 1965.  
B ANYASZATI LAPOK. Budapest, Hungary.

So: Eastern European Accession. Vol 5, no. 4, April 1956

JAMBOR, Imre, okleveles banyamernok; MOSER, Karoly, okleveles banyamernok;  
SEBESTYEN, Bela, okleveles banyamernok

Determination of the entry quantities in proportion to the extraction  
and the heading velocity by means of the method of analytical mathematics.  
Bany lap 95 no.11:704-712 N '62.

1. Pecsí Szenbanyaszati Troszt, Pecs.

MOSER, Karoly, okleveles banyamernok

Factors influencing mining velocity in the Pecs Lias coal  
mining. Bany lap 96 no.11:852-857 N '63.

1. Pecs Szebanyaszati Troszt, Pecs.

MOSER, Karoly, okleveles banyamernok; JAMBOR, Imre, okleveles banyagepeszmernok

Determination of coal reserves ready for dressing and mining.  
Bany lap 98 no.2:73-77 F '65.

1. Mecsek Coal Mining Trust, Pecs.

MOSIER, Lis

Etiology of interstitial plasma-cell pneumonia in infants. Wiadomosci  
parazyt. Warsz. 3 no.6:565-574 1957.

1. Z Zakładu Diagnostyki Lekarskiej Instytutu Higieny w Hamburgu.  
(PNEUMONIA, INTERSTITIAL PLASMA CELL, microbiology,  
(Pol))

YOSER, J.

on the minimal overlap problem of Erdos. p. 117

ACTA ARITHMETICA (Polska Akademia Nauk. Instytut Matematyczny) Warszawa.  
Vol 5, no. 2, 1959

Monthly List of East European Accessions (EEAI) LC, Vol. 9, no. 2, Feb. 1960

Uncl.

MOSEER, Miklos

Up-to-date testing methods for manufacturing grinding  
wheels. Epitoanyag 12 no.2:66-74, F '60.

MOSER, Miklos

Quality and structure of grinding tools containing ceramic binders. Epitoanyag 16 no. 8:300-311 Ag '64.



with the following results:  
g. H<sub>2</sub>O 28.0%, has been obtained by the reaction of 1.7

MOSEROVA, J.; DOBRKOVSKY, M.; MUSIL, J.; PAVLOVSKA, J.

Biological half-life of iodinated albumin administered to  
burned patients. *Cas. lek. cesk.* 103 no.28:791-794  
6 JI'64

1. Klinika plasticke chirurgie lekarske fakulty hygienicke  
KU [Karlovy university] v Praze, oddeleni pro lecbu popalenin  
(prednosta: prof. dr. V.Karfik) a Oddeleni pro klinickou bioche-  
mii lekarske fakulty hygienicke KU [Karlovy university] v Praze  
(vedouci: MUDr. RNDr. J.Oppl).

MOSESHVILI, Sh.Ya.

Effect of different types of stimulation of the ileocecal region  
of the intestine on cardiac activity in man. Soob.AN Gruz.SSR  
24 no.4:467-472 Ap '60. (MIRA 13:7)

1. Tbilisskiy gosudarstvennyy meditsinskiy institut, kafedra  
fiziologii. Predstavleno chlenom-korrespondentom Akademii A.N.  
Bakuradze.

(INTESTINES--INNERVATION)  
(HEART)

MOSESHVILI, Sh.Ya.

Effect of the stimulation of the rectal receptors on the secretory activity of the stomach and the role of vagal and splanchnic nerves in the realization of this effect. Soob. AN Gruz. SSR 35 no.3:689-695 S '64. (MIRA 17:1.

1. Tbil'skiy gosudarstvennyy meditsinskiy institut. Predstavleno chlenom-korrespondentom AN GruzSSR A.N. Bakuradze.



PA 66/49188

MOSESOV, N. S.

UZR/Petroleum - Motors, Electric Jun 49  
Pumping Machinery

"Self-Starting of Electric Motors in Deep-Well  
Pumping Equipment," N. S. Mososov, 6 pp

"Energet Byul" No 6

Experimental tests on various systems of self-  
starting electric motors for deep-well pumping  
equipment were carried out recently at petroleum  
enterprises of the Azerbaijan Petroleum Ind.  
Describes three types of self-starting systems:  
(1) Individual self-starting, (2) a group-feeder  
self-starting, and (3) self-starting using a so-  
called fourth wire. Explains technical operation  
66/49188

UZR/Petroleum - Motors, Electric Jun 49  
(Contd)

of systems, and shows wiring diagrams for  
several proposed variations of group-feeder  
systems.

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May 49

USSR/Petroleum  
Drilling Power  
Electric Power  
"Electric-Power Supply for Ocean Drilling," N. S.

Moscow, 5 pp

"Target Byul" No 5

Compares overhead and cable lines for supplying new oil-drilling ocean floats. Considers various factors such as average depth of water for overhead and under-  
vial and sea conditions, and other initial savings, in water pipe lines. Shows substantial initial savings in cable installation (less than one third as much).  
56/49587  
May 49

(Contd)

USSR/Petroleum (Contd)  
but much higher annual operating costs (seven times as large). Recommends cables for exploratory and shallow (cable factories should assure good quality line for produce larger cable lengths). Advises research institutes to study certain problems brought out herein.

56/49587

MOSKOV, N. S.

1954-55, 1956-57, 1958-59, 1960-61, 1962-63.

Hosesyan, Z. G. "Contrast mammography in certain types of mammary gland diseases," (Report), Trudy III Zakavkazsk. s"yezda khirurgov, Yerevan, 1961 (in cover: 1962), p. 113-122.

SG: 1-5240, 17 Dec. 53, (Letopis 'Zhurnal 'rykh Stat'y, No. 26, 1954).



TSINTSEVICH, Ye.P.; ALIMARIN, I.P.; MOSEVA, L.I.; BAZANOVA, M.P.

Cation exchange study of the behavior of indium as dependent on the concentration of oxalate ions and of the pH of solution. Vest. Mosk. un. Ser.2: Khim. 18 no.4:70-72 J1-Ag '63. (MIRA 16:9)

1. Kafedra analiticheskoy khimii Moskovskogo universiteta.  
(Indium) (Ion exchange resins) (Sodium oxalates)  
(Hydrogen-ion concentration)

MOSEVA, Nelly; Research Institute for Health Hazards and Occupational Diseases, Sofia, Bulgaria, Director Docent Dr M. LUKANOV.  
[Original version not given]

"Comparative Evaluation of the Polarographic Method of Lead Determination Without Blood Mineralization and of the Dithizone Method."

Prague, Pracovni Lekarstvi, Vol 18, No 2, March 66, pp 69-72

Abstract [Author's English summary modified]: The author modified Telsinger's polarographic method by using a larger capillary and increasing the flow of Hg. The height of the Pb wave in HCl solution was twice as high as the wave for an identical amount of Pb in a deproteinized blood filtrate. For a standard lead solution the results of the polarographic and dithizone methods agree. The differences in the determination of Pb are explained in Pracovni Lekarstvi, Vol 18, No 2, pp 72 - 78. 1 Figure, 2 Table, 1 Western, 2 Czech, 1 Yugoslav reference. (Manuscript received Oct 64).

1/1

MOSEVICH, AA

AUTHORS: Paramonova, V. I., Mosevich, A. N., Subbotina, A. I. 78-1-16/L3

TITLE: The Application of Ion Exchange in the Investigation of the State of the Substance in Solution (Primeneniye ionnogo obmena k izucheniyu sostoyaniya veshchestva v rastvore).  
IV. The Investigation of the Complex-Formation of Yttrium With Lactic Acid by Means of the Method of "Absorption-Curves" (IV. Izucheniye kompleksobrazovaniya ittriya s molochnoy kislotoy metodom "krivyykh pogloshcheniya").

PERIODICAL: Zhurnal Neorganicheskoy Khimii, 1958, Vol. 3, Nr 1, pp. 88-94 (USSR).

ABSTRACT: From the analogy with complex compounds of the trivalent ions of the rare earths with lactic acid:  $MeA_3$  (A = lactic acid anion) (reference 1) a similar yttrium-compound with lactic acid.  $YA_3$  can be supposed. This was confirmed by the tests carried out by the authors, because yttrium is not absorbed by anionite in solutions with lactate-ions (with  $pH < 5$ ), viz. it does not form any negative complexes. Yet intercomplexes  $YA_2^+$  and  $YA^{2+}$  may possibly still exist in the solution besides the  $Y^{3+}$  -ions and the neutral complex  $YA_3^0$ .

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The Application of Ion Exchange in the Investigation  
of the State of the Substance in Solution.

78-1-16/43

IV. The Investigation of the Complex-Formation of Yttrium With  
Lactic Acid by Means of the Method of "Absorption-Curves".

The authors therefore watched the process of complex-formation of yttrium with lactic acid within a sufficiently wide range of concentration of the lactic acid anion by means of the method referred to in the title (reference 2,3). The static method (reference 3) was applied here in 3 test series. I - With a constant concentration of lactic acid. II - With pH-values of approximately the same equilibrium. With the series I) and II) cationite KU-2 was used. III - Conditions similar to those of the 1st series, however, with cationite SBS. The isotope  $Y^{90}$  was used in the series I) and II), -  $Y^{91}$  in the series III). In view of keeping constant the ionic strength ( $\approx 0,2$ ) neutral salt ( $NaCl$  or  $NH_4Cl$ ) was added, further an impulse amount (impul'snoye kolichestvo) of yttrium. The following conclusions can be drawn from the test results (figures 1, 2, tables 1, 2, 4) : 1) if the results obtained are expressed in form of the relative absorption  $g$ , the results on both cationites (KU-2 and SBS) can be satisfactorily plotted on the dependence-curve  $g_+$  on  $c_A$  (that of  $lg c_A$ ). This indicates that if the

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mechanism of absorption of the investigated ion is a mechanism of

The Application of Ion Exchange in the Investigation  
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exchange, and no specific absorption takes place, the  $\beta_+$  - values do not depend on the nature of the cationite. 2) It is unimportant which salt is added for the maintenance of the ionic strength (0,2) (NaCl under  $\text{NH}_4\text{Cl}$ ); the  $\beta_+$ -values were equal under corresponding conditions and were easily placed on the curve of dependence of  $\beta_+$  on  $c_A$ . 3) It resulted from the tests that the  $\beta_+$ -values depend clearly on  $c_A$  (or on  $\lg c_A$ ) and not on the pH of the equilibrated solution (table 1, 2). 4) The calculations of the dependence of  $\lg \frac{\beta_+}{1-\beta_+}$  of  $\lg c_A$  showed that the complex cation  $\text{YA}^{3+}$  could not be proved in the tests carried out by the authors. 5) With medium concentration of the addendum the dominating form was  $\text{YA}_2^+$  (of  $c_A = 0,001$  n up to  $c_A = 0,04$  n). 6) The constant of inconstancy of  $\text{YA}_2^+$  computed on the strength of the test results according to the formula:

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The Application of Ion Exchange in the Investigation  
of the State of the Substance in Solution.  
IV. The Investigation of the Complex-Formation of Yttrium With  
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$K_H = \frac{K + \cdot C^2 A}{1 - K}$ , is equal to  $(1,1 \pm 0,4) 10^{-5}$ . 7) With a surplus

of the addendum, when the dominating yttrium-form in the solution is  $YA_3^0$ , the cationite shows a small absorption which is due to a graded dissociation  $YA_2^0 \rightleftharpoons YA_2^+ + A^-$ .

There are 4 figures, 2 tables, and 3 Slavic references.

SUBMITTED: June 18, 1957.

AVAILABLE: Library of Congress.

Card 4/4

PARAMONOVA, V.I.; MOSEVICH, A.N.; GORYANIN, N.V.

Adsorption of microquantities of thorium on ash-free, platinized  
activated carbon. Radiokhimiia 1 no.4:475-481 '59.

(MIRA 13:1)

(Thorium) (Carbon, Activated)

W. S. Ch, A. L., and W. S. Ch — (1955), "Investigation of the  
properties of plate glass," *Journal of Applied Physics*, 26, 11, 1111-1116  
W. S. Ch, A. L., and W. S. Ch — (1956), "Investigation of the  
(VL, 20-10, 1956)



MOSEVICH, A.N.; PARANDHOVA, V.I.; NIKOL'SKIY, B.P.

Determination of the exchange constants of some anions on  
activated platinised carbon. Vest.LGU 15 no.10:93-97 '60.  
(MIRA 13:5)

(Ion exchange) (Carbon, Activated)

S/076/60/034/009/023/041XX  
B020/B056

AUTHORS: Mosevich, A. N., Nikol'skiy, B. P., Paramonova, V. I., and Mordberg, Ye. L.

TITLE: Study of the Adsorption of Ions on Platinized Carbon by Exchange of the Gaseous Atmosphere

PERIODICAL: Zhurnal fizicheskoy khimii, 1960, Vol. 34, No. 2, pp. 1900 - 1906

TEXT: A study has been made of adsorption and desorption of  $\text{Cs}^+$  and  $\text{Br}^-$  ions by means of ash-free platinized active carbon from one and the same sample solution by way of an exchange of the gaseous atmosphere above the solution. The adsorption took place mainly from buffer solutions. The production of active carbon and its platinization have already been described in earlier papers (Refs. 7, 14, 15). The carbon used had a burnup of about 50 % and a maximum ash content of 0.05 % by weight. The weight of the platinum layer on the carbon surface amounted to 0.25 % of the weight of the carbon. Carbon fractions with a particle diameter of 1-2 mm were taken. Gamma-active  $\text{Cs}^{134}$  and  $\text{Br}^{82}$  tracer isotopes were used. The experi-  
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Study of the Adsorption of Ions on Platinized S/076/60/034/009/023/041XX  
Carbon by Exchange of the Gaseous Atmosphere B020/B056

ments were carried out in the vessel shown in Fig. 1. Electrolytic hydrogen and atmospheric air freed from  $\text{CO}_2$  were used for the purpose. If several reaction vessels are used in conjunction, sample solutions may be taken from one vessel without interrupting the gas flow by the others. The four-vessel system used made it possible to investigate adsorption-desorption changes in the same sample by blowing hydrogen and air alternatively through the system. Table 1 shows the dependence of the cesium quantity adsorbed from a  $\text{CsNO}_3$  solution on its concentration, the quantity of cesium adsorbed from the hydrogen atmosphere rising with a rising cesium concentration in the solution. The cesium adsorption is accompanied by an acidification of the solution, which increases with an increasing adsorption of cesium. In the desorption of cesium into the same solution, air instead of hydrogen was used; this desorption was a quantitative one, which indicates the electrostatic character of the cesium adsorption. An alkalization of the solution was found to take place. Table 2 shows the dependence of the adsorption of cesium ions on the pH of the solution for initial cesium concentrations  $c_{\text{Cs}} = 0.01 \text{ N}$  and  $0.05 \text{ N}$ . Tables 3 and 4 show the data on the adsorption of cesium from buffer solutions in the presence of a strange ion (sodium). In the case of a constant Na concentration, the

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Study of the Adsorption of Ions on Platinized Carbon by Exchange of the Gaseous Atmosphere S/076/60/034/009/023/041XX  
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adsorption of Cs increases with its concentration; if, however, the Cs concentration and the pH of the solution remain constant, and the Na concentration is varied, the adsorption of the Cs ions decreases with sodium concentration. The dependence of the adsorption of the Cs ions on  $pNa$  ( $= -\log c_{Na}$ ) is linear under these conditions (Fig. 3). If the Cs- and Na-ion concentrations are kept on a constant level and the pH of the solution is varied (Fig. 4), the adsorption of Cs increases linearly with the pH. The results obtained by the experiments with respect to the adsorption of the  $Br^-$  ions on platinized carbon are given in Table 4, from which it follows that the adsorption of  $Br^-$  increases at a low pH. All results obtained indicate the electrostatic character of bromine-ion adsorption on the platinized carbon. N. A. Shilov, A. N. Frumkin, D. N. Strazhesko, B. Ye. Tartakovskaya, S. Petrov, R. Burshteyn, and T. Kiseleva are mentioned. There are 4 figures, 4 tables, and 19 references: 13 Soviet and 6 German.

ASSOCIATION: Leningradskiy gosudarstvennyy universitet im. A. A. Zhdanova  
(Leningrad State University imeni A. A. Zhdanov)

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Study of the Adsorption of Ions on Platinized Carbon by Exchange of the Gaseous Atmosphere S/07/62/034/009/023/041 XX  
B020/B056

SUBMITTED: August 2, 1958

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S/076/60/034/012/003/027  
B020/B067

AUTHORS: Nikol'skiy, B. P., Paramonova, V. I., and Mosevich, A. N.  
TITLE: Determination of the Exchange Constants of Some Cations on Activated Platinized Carbon in Hydrogen Atmosphere  
PERIODICAL: Zhurnal fizicheskoy khimii, 1960, Vol. 34, No. 12, pp. 2664-2670

TEXT: According to the papers by A. N. Frumkin and his collaborators (Refs. 1-10) the exchange of two ions between carbon and solution is expressed by the following equation of exchange isothermal lines:

$$g_L^{1/z_L} / g_M^{1/z_M} = K_{L/M} (f_L^{1/z_L} / f_M^{1/z_M}) (c_L^{1/z_L} / c_M^{1/z_M}) \quad (1)$$

where  $g_L$  and  $g_M$  are the equilibrium amounts of the ions L and M in milliequivalents which are absorbed by 1 g of the absorbent;  $c_L$ ,  $c_M$ ,  $f_L$ , and  $f_M$  are the equilibrium concentrations and activation coefficients of the ions L and M in the solution,  $z_L$  and  $z_M$  the valences of the ions L

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Determination of the Exchange Constants  
of Some Cations on Activated Platinized  
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and M, and  $K_{L/M}$  the exchange constant of the ions L and M. The authors examine the applicability of equation (1) and the determination of the exchange constants of some cation pairs on carbon from neutral solutions of their salts. Under the experimental conditions the "apparent" ("concentration") constant  $K'_{L/M}$  was obtained from the following equation

$$K'_{L/M} = K_{L/M} (\gamma_L^{1/z_L} / \gamma_M^{1/z_M}) \quad (2).$$

The apparent exchange constant  $K'_{L/M}$  is bound to remain constant at constant ionic strength of the solution in first approximation. The methods of determining the exchange constant are described in Refs. 16 and 17. The device used for this experiment is illustrated in Fig. 1. The experiments showed that the solution above carbon has to be exchanged seven to eight times in order to obtain a solution with the same composition as the initial solution. The exchange constants of the ion pairs Ba - Cs, Ca - Cs, Mg - Cs, and Ca - Mg were determined, i.e., that of the chlorides at a constant ionic strength of 0.1. The apparent exchange

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Determination of the Exchange Constants  
of Some Cations on Activated Platinized  
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constants were calculated from the following equation:

$$K'_{L/M} = (c^{1/z_M} g_L^{1/z_L}) / (c_L^{1/z_L} g_M^{1/z_M}) \quad (3).$$

The maximum error in calculating the constant is 15-20%. The experimental results are listed in Tables 1-4. It was found that the absorption capacity of carbon is the same for solutions with equal ionic concentrations and any type of cations. In the experiments made by the authors it was between  $0.078 \pm 0.006$  mg/eq/g. The reversibility of the adsorption of these ions on coal can be checked by means of the given exchange constant for the ion pairs Ca - Cs, Mg - Cs, and Ca - Mg. Also the exchange constants of the ion pairs Ba - Ca and Ba - Mg could be calculated from the experimentally determined data for the above ion pairs by using the ratios  $K'_{Ba/Ca} = K'_{Ba/Cs} : K'_{Ca/Cs} = 0.86$  and  $K'_{Ba/Mg} = K'_{Ba/Cs} : K'_{Mg/Cs} = 1.05$ .  
The values of the exchange constants of the ion pairs which are close to unity indicate the low absorption selectivity of these ions on carbon. This can be explained by the absence of ionogeneous groups on the surface of platinized carbon as well as by the fact that the hydrate shell of the

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Determination of the Exchange Constants  
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ion little influences the adsorption since the surface is covered by cations only to a small extent. The results indicate that the ion-exchange theory can be extended also to the cation-exchange adsorption on the surface of platinized carbon. They also confirm the electrostatic character of this adsorption. A. M. Trofimov and I. A. Tarkovskaya are mentioned. There are 1 figure, 4 tables, and 24 Soviet references.

ASSOCIATION: Leningradskiy gosudarstvennyy universitet im. A.A. Zhdanova  
(Leningrad State University imeni A. A. Zhdanov)

SUBMITTED: February 18, 1959

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PARAMONOVA, V.I.; MOSEVICH, A.N.; ZONOV, Yu.G.

Determination of the exchange constants of some anions on  
anion exchangers. Vest. LGU. 18 no.16:115-119 '63.  
(MIRA 16:11)

PARAMONOVA, V.I.; MOSEVICH, A.N.; IGNAT'YEV, Yu.N.

Chloride anion complex formation of trivalent thallium. Radiokhimiya 6  
no.5:527-531 '64. (MIRA 18-1)

PARAMONOVA, V.I.; MOSEVICH, A.N.; MA TSY-GUAN [Ma Tz'G-xuan]

Ion exchange used in the study of the state of a substance in solution. Part 11: Complex formation of uranyl with malonic acid. Radiokhimiia 6 no.6:682-694 '64.

(MIRA 18:2)

MOSEVICH, A.N.; KUZNETSOV, N.P.; GUSEV, Yu.K.

Chromatographic separation of some oxygen compounds of xenon  
and iodine. Radiokhimiia 7 no.6:678-687 '65.

(MIRA 19:1)

KIRIN, I.S.; GUSEV, Yu.K.; MOSEVICH, A.N.; KUZNETSOV, N.P.;  
GUSEL'NIKOV, V.S.

Separation of  $\text{XeO}_3$  and  $\text{HIO}_3$  on zirconium phosphate. Radiokhimiia 7  
no.6:736-738 '65. (MIRA 19:1)



MOSEVICH, I.A.; TVERDOVSKIY, I.P.; VERT, Zh.L.

Sorption of hydrogen by disperse palladium-gold alloys. Trudy GIPKH  
no.42:173-181 '59. (MIRA 13:10)

(Palladium-gold alloys)

(Hydrogen)



S/081/60/000/012(I)/001/002

AO06/A001

Translation from: Referativnyy zhurnal, Khimiya, 1960, No. 12 (I), p. 86,  
# 46084

AUTHORS: Tverdovskiy, I.P., Vert, Zh.L., Karpova, R.A., Mosevich, I.A.

TITLE: On the Solubility of Hydrogen in Alloys of Palladium With Silver,  
Copper and Gold ✓

PERIODICAL: Sb. tr. Gos. in-ta prikl. khimii, 1959, No. 42, pp. 182-198

TEXT: The author puts forward a scheme of distribution of electrons and "vacancies" in 4d- and 5s- bands in the Pd - Ag system and in 4d- and s- bands in the Pd-Cu system. Using simulation notions and assuming a limited number of vacancies for hydrogen dissolution in the Pd - Ag, Pd - Cu and Pd - Au systems, isothermal equations of hydrogen dissolution in the alloys are obtained. They serve to determine the magnitude of the chemical potential of hydrogen dissolved  $\Delta \mu_H$ , and the coefficient  $\alpha$ , characterizing the deviation from the ideal state in the Langmuir equation. An equation is obtained for calculating

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S/081/60/000/012(I)/001/002  
A006/A001

On the Solubility of Hydrogen in Alloys of Palladium With Silver, Copper and Gold  
the differential heat of hydrogen dissolution  $Q$  (⊖) and its applicability  
is demonstrated.

Authors' resume

Translator's note: This is the full translation of the original Russian abstract.

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MOSEVICH, I.A.; TVERDOVSKIY, I.P.; VERT, Zh.L.

Hydrogen overvoltage on disperse palladium-gold alloys. Trudy GINCH  
no.42:199-204 '59. (MIRA 13:10)

(Palladium-gold alloys)

(Overvoltage)

(Hydrogen)

VERT, Zh.L.; TVERDOVSKIY, I.P.; MOSEVICH, I.A.

Hydrogen overvoltage on disperse palladium-silver alloys. Trudy  
GIPKH no.42:209-211 '59. (MIRA 13:10)  
(Overvoltage) (Palladium-silver alloys)  
(Hydrogen)

27212

S/081/61/000/014/008/030

B106/B110

54700

1273 also 1274

AUTHORS: Tverdovskiy, I. P., Mosevich, I. A., Vert, Zh. L., Karpova, R. A.

TITLE: Overvoltage of hydrogen separation and catalytic properties of disperse Pd-Cu, Pd-Ag, and Pd-Au alloys

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 14, 1961, 87, abstract 146607. (Sb. tr. Gos. in-ta prikl. khimii, no. 46, 1960, 229 - 239)

TEXT: The values of  $\eta$  on disperse Pd-Cu, Pd-Ag, and Pd-Au alloys were compared with their catalytic activities to clarify the relationship between the hydrogen overvoltage  $\eta$  on metals and the processes of electrochemical reduction and catalytic hydrogenation of organic compounds. For the systems studied, the dependence of  $\eta$  (or the constant  $a$  of the Tafel equation) on the alloy composition is characterized by two sections appearing on each curve; the  $\eta$ -value begins rising strongly only after addition of 70 - 75% of the second component to the palladium. The absolute  $\eta$ -values are similar for Pd-Cu and Pd-Ag alloys over the whole range of compositions; on Pd-Au

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Overvoltage of hydrogen separation and ...

B106/B110

alloys,  $\eta$  lies much lower, especially in the range of 50 - 0% Pd. In Pd-Cu and Pd-Ag alloys with  $< 60\%$  of the metal group I, the  $\eta$ -values and the rate constants of hydrogenation and electrical reduction of maleic acid are constant. In Pd-Au alloys in the range of 55 - 70% Au, a sharp decrease in catalytic activity corresponds to a constant  $\eta$ -value. The authors found a qualitative relationship between the catalytic activity,  $\eta$ , and the electron structure of the alloys investigated. From the same point of view, they considered the reactions of decomposition of  $\text{NaH}_2\text{PO}_2$  and  $\text{H}_2\text{O}_2$ .

[Abstracter's note: Complete translation.]

X

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VERT, Zh.L.; MOSEVICH, I.A.; TVERDOVSKIY, I.P.

Electrochemical determination of the heat of adsorption of hydrogen  
on a dispersed palladium electrode. Dokl. AN SSSR 140 no.1:  
149-152 S.O '61. (MIRA 14:9)

1. Gosudarstvennyy institut prikladnoy khimii, g. Leningrad.  
Predstavleno akademikom A.N.Frumkinym.  
(Hydrogen) (Palladium) (Heat of adsorption)

MOSEVICH, I.A.; TVERDOVSKIY, I.P.; VERT, Zh.L.

Catalytic hydrogenation and electrochemical reduction of  
quinone on disperse palladium-gold alloys. Zhur. fiz. khim.  
37 no.12:2683-2687 D '63. (MIRA 17:1)

1. Gosudarstvennyy institut prikladnoy khimii.



VERT, TH.L.; MOSNICH, I.A.

Decomposition of Permian and Triassic  
Pd-Cu, Pd-Ag, Pd-Au. *Trudy Vsesoyuzn. Nauchn. Ts.entr. Akad. Nauk SSSR*, 1971,  
(1971) 17:11

VERT, Zh.L.; MOSEVICH, I.A.; TVERDOVSKIY, I.P.

X-ray-diffraction study of hydrogen solubility in dispersed and compact palladium. Zhur. fiz. khim. 39 no.5:1061-1064. My '66.  
(MIRA 18.8)

1. Leningradskiy institut prikladnoy khimii.

15.8070

27505  
S/079/61/031/009/006/012  
D215/D306

AUTHORS: Arbuzova, I.A., and Mosevich, I.K.

TITLE: Synthesis and transformations of methylolamides of unsaturated acids

PERIODICAL: Zhurnal obshchey khimii, v. 31, no. 9, 1961, 3023 - 3025

TEXT: In earlier investigations Arbuzova, Ushakov, Plotkina, Efremova and Ulezlo (Ref. 1: Zh. O. Kh. 28, 1266, 1958) established that heating methylolmethacrylamide in the presence of HCl gives rise to dimethacrylamidodimethyl ether which copolymerizes to give cross-linked copolymers. It was, therefore, of interest to study transformations of other methylolamide derivatives of e.g. acrylic or substituted acrylic acids. The authors were able to prepare diacrylamidodimethyl ether  $(CH_2=CHCONHCH_2)_2O$  by heating methylolacrylamide in the presence of an acid catalyst. The compound is a crystalline solid m.pt. 125-126°C, soluble in water and

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Synthesis and transformations of ...

27505  
S/079/61/031/009/006/012  
D215/D306

easily polymerized. A similar method was used to prepare the acrylamide, methylol- $\beta,\beta$ -dimethylacrylamide, by reacting the amide of  $\beta,\beta$ -dimethylacrylic acid with paraformaldehyde. The compound melts at 81-82°C, is soluble in benzene and ethyl acetate and does not polymerize in the presence of free radical initiators and ionic catalysts. Heating with an acid catalyst results in the formation of methylene-bis- $\beta,\beta$ -dimethylacrylamide m.pt. 1735-1745°C. Methylolacrylamide was prepared according to the Feuer and Lynch method.  $\beta,\beta$ -dimethylacrylamide was obtained by reacting the acid chloride with ammonia. Diacrylamidodimethyl ether,  $C_8H_{12}O_3N_2$ , m.pt. 125.5-126°C was prepared by heating 0.1 g mol of the amide in  $CCl_4$  with 0.1 ml HCl for 30 min. Heating the amide with paraformaldehyde in the presence of sodium ethoxide gave methylol  $\beta,\beta$ -dimethylacrylamide, which on heating at 60°C with HCl gave methylene-bis- $\beta,\beta$ -dimethylacrylamide. There are 5 references: 2 Soviet-bloc and 3 non-Soviet-bloc. The reference to the English-language publication reads as follows: H. Fuer, U. Lynch, J. Am. Chem. Soc. 75, 5027,

Card 2/3

Synthesis and transformations of ... 27505  
S/079/61/031/009/006/012  
D215/D306

1953.

ASSOCIATION: Instytut vysokomolekulyarnykh soyedineniy Akademii  
nauk SSSR (Highmolecular Compounds Institute, Academy  
of Sciences, USSR)

SUBMITTED: October 17, 1960

Card 3/3

APRUZOVA, I.A.; MOSEVICH, I.K.

Polymerization of dibenzalacetone. Vyskom. soed. 6 no.1:  
13-15 Ja'64. (MIRA 12.5)

1. Institut vysokomolekulyarnykh soedineniy AN SSSR.

CP

25

PROCESSES AND PROPERTIES INDEX

Preserving fish-net materials in the H'men lake. O. Antipova and M. Mosevich, *Rybnoe Khoz.* 1939, No. 1, 35-40; *Khim. Referat. Zhur.* 1939, No. 6, 118.--The destructive action on the net materials in water is caused mainly by aerobic bacteria. Naphthid is the best preservative; next in order are strong tannin, anthracene oil and aniline-HCl. The residual strength of the nets (when treated with naphthid) after a 3-5 months use was 70.5%, i. e., 3.5 times greater than that of the untreated nets. W. R. Henn

ASTM A36 METALLURGICAL LITERATURE CLASSIFICATION

MOSEVICH, M. V.

"The Participation of Bacteria in the Formation  
of Winter Mass Mortality Conditions in the Rivers of the  
Ob-Irtish Basin," Mikrobiol., 13, Nos. 2-3, 1944.  
Union Inst. Lake and River Fish Economy,  
-1944-.



MOSEVICH, M. V.

Mosevich, M. V. - "Animals parasitic on fish of the Ob' and Irtysn Rivers", Izvestiya Vsesoyuz. nauch.-issled. in-ta ozer. i rech. ryb. khoz-va, Vol. XXVII, 1949, no. 1-2, - Bibliog: p. 95-96.

SO: U-4110, 17 July 53, (Letopis 'Zhurnal 'nykh Statey, no. 19, 1949).

MOSEVICH, M. V.

Mosevich, M. V. - "Fish parasites of the lakes of the Ob'-Irtys' basin", Izvestiya Vsesoyuz. nauch.-issled. in-ta ozer. i rechn. ryb. khoz-va, Vol. XXXI, 1953, p. 122-26.

SO: U-4110, 17 July 53, (Letovis 'Zhurnal 'nykh Statey, No. 19, 1949).

Mosevich, M. V.

✓ The fundamental features of the hydrochemical regime and microbiological processes in the Rybinsk reservoir. CH  
N. A. Mosevich and M. V. Mosevich. *Trudy Problemy i Temat. Sovetskaniy*, No. 2, *Problemy Gidrobiol. Vnutren. Vod* No. 2, 11-21 (1954).—A report of investigations during 1946 and 1948 on the compn. of the waters of the rivers and lakes that feed the Rybinsk reservoir and of the reservoir itself. The data cover seasonal variations of the anions and cations in soln.,  $\text{Cl}$ ,  $\text{SO}_4^{--}$ ,  $\text{HCO}_3^-$ ,  $\text{K}$ ,  $\text{Na}$ ,  $\text{Mg}$ , and  $\text{Ca}$ , and the quantity of org. matter and  $\text{P}$  in the mud at the bottom of the reservoir. At the same time the sol.  $\text{O}_2$  and  $\text{CO}_2$  were detd. The higher  $\text{P}$  content in the reservoir waters is ascribed to the  $\text{P}$  in the soil of the areas flooded. The total quantity of minerals is generally lower in the reservoir than in the waters of the rivers that feed it. This is explained by the inflow of flood waters during the rainy season.  
J. S. Joffe

MOSEVICH, M.V.

Micro-organisms characteristic of the pollution of the Volga River  
near Kuibyshev and Stalingrad Reservoirs. Trudy probl. i tem. sov.  
no.7:127-132 '57. (MLRA 10:4)  
(Volga River—Bacteriology)

Mosevich, N. A.

✓ The fundamental features of the hydrochemical regime and microbiological processes in the Rybinsk reservoir. CH  
N. A. Mosevich and M. V. Mosevich. *Trudy Problemy i Temat. Sovetskoi*, No. 2, *Problemy Gidrobiol. Vnutren. Vod* No. 2, 11-21(1954).--A report of investigations during 1940 and 1948 on the compn. of the waters of the rivers and lakes that feed the Rybinsk reservoir and of the reservoir itself. The data cover seasonal variations of the anions and cations in soln., Cl, SO<sub>4</sub><sup>2-</sup>, HCO<sub>3</sub><sup>-</sup>, K, Na, Mg, and Ca, and the quantity of org. matter and P in the mud at the bottom of the reservoir. At the same time the sol. O<sub>2</sub> and CO<sub>2</sub> were detd. The higher P content in the reservoir waters is ascribed to the P in the soil of the areas flooded. The total quantity of minerals is generally lower in the reservoir than in the waters of the rivers that feed it. This is explained by the inflow of flood waters during the rainy season.  
J. S. Joffe

103-1104 17A

✓ The phosphorus cycle in reservoirs. N. A. Moskvich.  
Trudy Problemy i Teori. Sov. Vuzov, No. 2, Problemy  
Gidrobiol. Vnutren. Vod No. 2, 160-68 (1954). —It is shown  
that in small lakes the P content of material from their  
bottom is higher than of the deep and large lakes, such as  
Ladoga or the Rybinsk reservoir. The P cycle is assoc.  
with the erosion of the soil. J. S. Joffe

MOSEVICH, N. A.

"Standards of the degree of purity of waste waters of the paper and wood pulp industry." The 13th Limnological Congress, 27 July-7 August 1956, Helsinki.

Sum 1274

Translation from: Referativnyy zhurnal, Geologiya, 1957, Nr 12,  
p 76 (USSR) 15-57-12-17243

AUTHORS: Alferovskaya, M. M., Mosevich, N. A.

TITLE: Data on the Mechanical and Chemical Soil Analysis  
at Lake Ladoga (Materialy k mekhanicheskomu i khimi-  
cheskomu sostavu gruntov Ladozhskogo ozera)

PERIODICAL: Izv. Vses. n.-i. in-ta oz. i rech. ryb. kh-va, 1956,  
Vol 38, pp 43-52

ABSTRACT: Bibliographic entry  
Card 1/1



*MOSEVICH, N.A.*

MOSEVICH, N.A., doktor biol.nauk, prof.

Protection of natural waters from pollution. Gig. i san.  
22 no.12:60-62 D '57

(MIRA 11:3)

1. Iz Vsesoyuznogo nauchno-issledovatel'skogo instituta ozernogo i  
rechnogo rybnogo khozyaystva.

(WATER POLLUTION, prev. & control  
in Russia, of reservoirs (Rus)

MULEVICH, N. A. (USSR)

"Sauerstoffdefizit in den Flüssen des West-Sibirischen Tieflandes, ihre Ursachen und Einflüsse auf aquatische Fauna."

report submitted for the 14th Intl. Limnological Congress, Vienna, 20 Aug - 8 Sept 1959.

KIRPICHNIKOV, V.S.; MOSEVICH, N.A.; PROTASOVA, V.I.; BAUYER, O.N.

Optimum conditions in wintering ponds for the young-of-the-  
year common carp, the Amur carp, and their hybrids. Trudy  
Gidrobiol. ob-va 10:52-85 '60. (MIRA 13:9)  
(Novgorod Province--Fish ponds) (Carp)

MOSENDZ, N.A.; MAKARA, A.M.

Effect of the composition of flux on the content of sulfur and  
oxygen in the seam metal. Avtom.svar. 18 no.1:38-42 Ja '69.  
(MIRA 18:1)

1. Institut elektrosvarki im. Ye.O.Patona AN UkrSSR.

MOSENDZ, N.A.

Scientific and technical conference on crystallization processes.  
Avtom.svar. 18 no.1:78-79 Ja '65. (MIRA 12:3)

1. MOSEVICH, P. I.; SINGALEVICH, V. S.; Engs.

2. USSR (600)

4. Lumbering

7. Raft-building device for use in sorting and logging operations. Mekh. trud. rab.  
7 no. 3 1953

9. Monthly List of Russian Accessions, Library of Congress, June 1953. Unclassified.

SOV/112-57-5-10674

Translation from: Referativnyy zhurnal. Elektrotehnika, 1957, Nr 5, p 158 (USSR)

**AUTHOR:** Mosevich, P. I.

**TITLE:** Electromechanical Accessory to the SL Meter for Measuring Timber  
Volume at Longitudinal Log Conveyers (Elektromekhanicheskoye ustroystvo k  
schetchiku "SL" dlya ob'yemnogo ucheta lesa na prodol'nykh brevnotaskakh)

**PERIODICAL:** Tr. Volzhsko-Kamsk. fil. Tsentr. n.-i. in-ta vod. lesotransp. i  
gidrotekhn., 1956, Nr 2, pp 88-100

**ABSTRACT:** Bibliographic entry.

Card 1/1

MOSEVICH, P.I.

Cable log conveyors designed by the Volga-Kara Branch of the Central  
Scientific Research Institute of Timber Floating. Biul.tekh.-ekon.  
inform. no.9:73-75 '58. (MIRA 11:10)  
(Lumber--Transportation)



MOSEVICH, P.I., inzh.

Using the VKF conveyers in sorting logs. Mekh.i avtom.proizv. 16  
no.3:25-30 Mr '62. (MIRA 15:4)  
(Lumbering--Machinery)

SHRAYBER, L.B., prof.; MOSEVICH, P.N., kand. med. nauk

Selective injury of individual peripheral nerves of the  
hand and the arm in lead intoxication. Med. zhur. Uzb. no.7:  
35-39 JI '63. (MIRA 17:2)

1. Iz Uzbekskogo nauchno-issledovatel'skogo instituta  
sanitarii, gigiyeny i professional'nykh zabolevaniy (dir. -  
dotsent A.Z. Zakhidov) i kafedry gistologii Tashkentskogo  
meditsinskogo instituta (zav. - dotsent A.G. Gulamov).

SHRAYBER, L.B.; MOSEVICH, P.N.

Pathogenesis of a preponderance of lesions of the radial nerve  
in lead poisoning. Zhur.nevr. i psikh. 63 no.12:1775-1779 '63.  
(MIRA 18-5)  
1. "zbekskiy nauchno-issledovatel'skiy institut sanitarii, gigiyeny  
i professional'nykh zabolevaniy (direktor - dotsent A.Z.Zakhidov)  
i kafedra gistologii Tashkentskogo meditsinskogo instituta.

MOSEVICH, T.N.; KHEYSIN, Ye.M.

Some data on electron microscopic study of merozoites of *Eimeria*  
*intestinalis* from the intestines of a rabbit. TSitologia 3  
no. 1:34-39 Ja-F '68, (MIRA 14:2)

1. Laboratoriya mikroskopii Instituta tsitologii AN SSSR,  
Leningrad.

(COCCIDIOSIS) (ELECTRON MICROSCOPY)

MOSEVICH, T. N.

"The Problem of the Function of the Endoplasmic Reticulum in the Infusorian Colpidium Colpoda." pp. 48

Institute of Cytology AS USSR Laboratory of Microscopy

II Nauchnaya Konferentsiya Instituta Tsitologii AN SSSR. Tezisy Dokladov  
(Second Scientific Conference of the Institute of Cytology of the Academy of Sciences USSR, Abstracts of Reports), Leningrad, 1962 88 pp.

JPRS 20,634

MOSEVICH, T.N.

Function of the endoplasmic reticulum in Colpidium colpoda.  
Sbor. rab. Inst.tsit. no. 3:18-19 '63. (MIRA 17:7)

1. Laboratoriya mikroskopii Instituta tsitologii AN SSSR.

1. The first part of the report is a summary of the

work done in the problem of complex membranes and their  
physical properties. The first part of the report is a summary of the

(MIRA 1018)

ANTSUTA, Ye.B., arkhitekt.; KIRILLOV, N.P., arkhitekt.; KUZNETSOV, V.V., arkhitekt.;  
SLOTINTSEVA, M.N., arkhitekt.; PYATIN, S.G., inzh. Prinimali uchastiye:  
CHUYENKO, R.G., arkhitekt.; MOSEVICH, Ya.Ya., arkhitekt.; GLAZKOV, F.I.,  
st. tekhnik; GOLUKHOV, G.I., inzh.; SAMSONOVA, T.T., inzh.; KOLESOVA,  
Ye.Ye., st. tekhnik; MAKAROVA, T.N., tekhnik; SHAMBAT, M.S., inzh.;  
SEMEENOVA, G.V., inzh.; PLATUNIN, Yu.S., gr. inzh.; VOL'NOVA, T.F.,  
tekhnik; SOLOV'YEV, M.I., inzh.; MOREV, I.A., tekhnik.

[Two-apartment house with two-room apartments; standard plan 1-102-5]  
Dvukhkvartirnyi zhiloi dom, kvartiry v dve komnaty; tipovoi proekt  
1-102-5. Moskva. Al'bom 1. 1960. 27 p. (MIRA 14:10)

1. Moscow. Tsentral'nyy institut tipovykh proyektov.  
(Apartment houses—Designs and plans)



MOSEVICH, Ye., inzhener; PRISHCHEPA, V., inzhener; SMIRNOV, A., inzhener.

Wedge-like fittings for compressed air tubes. Mast. ugl. 5 no. 2:18-19  
P '56. (MLRA 9:6)

(Pipe fittings) (Compressed air)

L 1476-66 BWT(d)/T IJP(c)

ACCESSION NR: AP5021863

UR/0280/65/000/004/0192/0194

AUTHOR: <sup>44.55</sup>Mosevitskiy, I. S. (Moscow); <sup>44.25</sup>Elyukin, S. B. (Moscow)

TITLE: A problem of nonlinear programming

SOURCE: AN SSSR. Izvestiya. Tekhnicheskaya kibernetika, no. 4, 1965, 192-194

TOPIC TAGS: nonlinear programming, algorithm, computer programming, nonlinear equation

ABSTRACT: Numerous technological objects may be described by a system of algebraic or transcendental equations. In the majority of cases such a (basically nonlinear) system of equations is extremely complex. The authors propose a unique numerical method for the solution of the systems of nonlinear equations or for the study and optimizing of a certain function of the variables of the problem. It is a generalization of Newton's method of tangents and the gradient method for the extremum search, and the authors apply it to the so-called local problems (the search of the root or extremum which is the nearest to the initial approximation). On the basis of the proposed method an algorithm was developed at the Institut atomnoy energii im. I. V. Kurchatova (Institute of Atomic Energy) leading to a universal program of local analysis of nonlinear equations and inequalities

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ACCESSION NR: AP5021863

on the M-20 computer. The maximum order of the problem under study is 45. The program has already been successfully used for the solution of numerous problems. "The authors thank V. A. Khodakov and N. N. Ponomarev-Stepnov for their participation in the discussion of the present paper and for their useful remarks,"  
Orig. art. has: 11 formulas.

ASSOCIATION: None

SUBMITTED: 20Jul63

ENCL: 00

SUB CODE: DP, MA.

NO REF SOV: 000

OTHER: 001

Card

2/2

ROSLIVITSKIY, M.I., Cand Phys Sci—(diss) "Study of polymerization of diene carbohydrates catalyzed by metallo-organic compounds and their complexes, on the basis of analysis of ~~the~~ molecular-weight distributions of the polymers." Len, 1956. 12 p (All-Union Sci Res Inst of Synthetic Rubber in Acad S.V. Lebedev. Inst of High-Molecular Compounds, Acad Sci USSR), 150 copies (11,45-53, 141)

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5(3)

PHASE I BOOK EXPLOITATION

SOV/3290

Mosevitskiy, M. I.

Issledovaniye polimerizatsii diyenovykh uglevodorodov, kataliziruyemoy metalloorganicheskimi soyedineniyami i ikh kompleksami, na osnovanii analiza molekulyarno-vesovykh raspredeleniy polimerov; avtoreferat dissertatsii na soiskaniye uchenoy stepeni kandidata fiziko-matematicheskikh nauk (Investigating the Polymerization of Diene Hydrocarbons Catalyzed by Organometallic Compounds And Their Complexes, On the Basis of Analysis of Molecular Weight Distributions of Polymers; Author's Abstract of a Dissertation For the Degree of Candidate of The Physical and Mathematical Sciences) Leningrad, 1958. 11 p. 150 copies printed.

Sponsoring Agencies: Vsesoyuznyy nauchno-issledovatel'skiy institut sinteticheskogo kauchuka im. akad. S. V. Lebedeva, and Akademiya nauk SSSR. Institut vysokomolekulyarnykh soyedineniy.

Scientific Instructors: S. Ya. Bresler, Professor, and I. Ya. Poddubnyy, Professor.

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Investigating the Polymerization (Cont.)

SOV3290

**PURPOSE:** This book is intended for chemists engaged in polymer research and may be used by teachers and students of advanced organic chemistry and polymer synthesis in institutions of higher learning.

**COVERAGE:** The booklet contains data compiled by the author in analyzing the nature of molecular-weight distributions (MVR) in polymers, which, as he states, permits the establishing of important phases of polymerization processes by means of comparing theoretical and experimental distribution curves in combination with kinetic data. In this work, isoprene and divinyl polymers, synthesized under the action of butyllithium, and isoprene polymers, synthesized under the action of complexes of triisobutylaluminum with titanium tetrachloride, were chosen for the analysis. Theoretical calculation of the MVR of polymers synthesized in the course of a nonequilibrium polymerization process precedes the discussion of experimental data. The study is significant in view of the interest recently shown in polymerization processes taking place in the presence of organometallic catalysts and, especially, of their complexes with some transition metal halides (the so-called Ziegler catalysts). No

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Investigating the Polymerization (Cont.)

SOV/3290

personalities are mentioned. There are Soviet references.

TABLE OF CONTENTS: None-the book is divided as follows:

Calculation of Nonequilibrium MVR	3
Study of Processes of Divinyl and Isoprene Polymerization Under the Catalytic Action of Butyllithium	5
Study of the Process of Isoprene Polymerization Under the Action of Triisobutylaluminum With Titanium Tetrachloride	7
Conclusions	11

AVAILABLE: Library of Congress (QD 381.P6M8)

Card 3/3

TM/os  
3/18/60

MOSEVITSKIY, M. I.

AUTHOR: Bresler, S. Ye., Korotkov, A. A. , Mosevitskiy, 57-1-16/30  
M. I., Poddubnyy, I. Ya.

TITLE: Investigation of Catalytic Polymerization of Diene  
Hydrocarbons by Means of Molecular-Weight Distribution  
of Polymers (Issledovaniye kataliticheskoy polimerizatsii  
diyenovykh uglevodorodov s pomoshch'yu molekulyarno vesovykh  
raspredeleniy polimerov)

PERIODICAL: Zhurnal Tekhnicheskoy Fiziki, 1958, Vol. 28, Nr 1,  
pp. 114-131 (USSR)

ABSTRACT: The problems in connection with the computation and the  
analysis of the theoretical molecular-weight distribution  
are investigated. On the basis of the analysis the ex-  
perimental data are discussed which are obtained on the  
occasion of the production of polyvinyl and polyisoprene  
samples by means of polymerization in a solution under the  
action of lithium-butyl. Lithium-buthyl had been chosen as  
catalizer because it is soluble in saturated hydrocarbons  
due to which fact polymerization is homogeneous and the  
analysis of the results is considerably easier. The  
theoretical computation and the analysis of the molecular

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Investigation of Catalytic Polymerization of Diene  
Hydrocarbons by means of Molecular-Weight Distribution  
of Polymers

57-1-16/30

weight distribution can be carried out according to 2 methods. Considering the discrete polymerization process i.e. the connection of a sequence of monomer units with the growing chain, a system of differential equations can be set up. The problem can be solved by means of this system. However, this solution expressed in sums is somewhat complicated. If, however, from the beginning polymerization is approximated by the assumption of a continuous increase of the chain, a much simpler problem with a very convenient solution is obtained. However, in this case some details get lost. Both methods of computation are given. Divinyl and isoprene are used as monomers and on the occasion of the polymerization hexane and diethyl-ester are used as solvents. The measuring of the polymerization kinetics was carried out according to the dilatometric method. The sedimentation experiments were carried out in the ultra centrifuge of Svedberg (ref. 14) with scale optics at 60000 - 65000 rev./min. The diffusion tests were carried out in the Lamm apparatus with scale optics (ref. 14) at  $(20 \pm 0,003)^{\circ}\text{C}$ . It is demonstrated

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Investigation of Catalytic Polymerization of Diene Hydro- 57-1-16/30  
carbons by means of Molecular-Weight Distribution of Polymers  
that on the occasion of polymerization of divinyl or  
isopren with lithium butyl in hexane at 30 - 70°C the  
role of the secondary reactions which lead to the limitation  
of the growing of the chain is only unimportant and that  
it can be neglected. I.e. nearly all active chains grow  
until the complete utilization of the monomer. On the  
occasion of the polymerization the author observed a  
similar occurrence to that described in reference 20 and  
21 by one of the authors. It is demonstrated that a delay  
in the growing of the polymer molecules due to interaction  
of the polar active centres counteracts simultaneously to  
the increase of the general polymerization-velocity with  
increase of the concentration of the active centres. With  
the increase of the polymerization-temperature the role  
of the heat movement becomes more important. The shape of  
the curves of the molecular-weight-distribution shows  
that on the one hand the formation of a complex with  
ester activates the binding to which the monomer units are  
connected with the active complex from the catalytical  
point of view, on the other hand, however, that it weakens  
them. For this reason a break in this connection is

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Investigation of Catalytic Polymerization of Diene Hydrocarbons by means of Molecular-Weight Distribution of Polymers

57-1-16/30

possible and it is accompanied by the separation of a complex from the polymer chain. Furthermore, it is demonstrated that the hydrodynamic properties of the macromolecules depend only little on the micro structure of the molecular chains. It seems to be due to the following reason: the increase from one member to two members with simultaneous shortening of the chain causes a decrease of the mobility of the individual members due to which fact the measurements of the molecular ball in the solution remain practically unchanged. The second very important conclusion is that the rise of the polymerization temperature to 70°C, as well as the use of ester as solvent lead to no important increase in the branching of the molecular chain since the presence of a uniform dependence  $S=d(M)$  for the polymer type concerned is very unlikely. Analytic dependence of  $S$  and  $M$  in the molecular weight interval ( $S$  in Svedberg): for polydivinyl in octan at 20°C...  $S = 0,0389 \cdot M^{0,39}$ , for polyisopren in octane at 20°C...  $S = 0,0155 \cdot M^{0,49}$ . M. N. Barsukova assisted at this work. The work was discussed with S. Ya. Frenkel'. There are 15 figures, 1 table, and 25 references, 6 of which are Slavic.

Card 4/5

Investigation of Catalytic Polymerization of Diene Hydro- 57-1-16/30  
carbons by Means of Molecular-Weight Distribution of Polymers

ASSOCIATION: Institute for High-Molecular Alloys AN USSR Leningrad  
(Institut vysokomolekulyarnykh soedineniy AN SSSR,  
Leningrad)

SUBMITTED: July 23, 1957

AVAILABLE: Library of Congress

Card 5/5

BRESLER, S.Ye.; MOSEVITSKIY, M.I.; PODDUBNYY, I.Ya.; CHESNOKOVA, N.N.

Study of the mechanism of polymerization of isoprene by a complex catalyst on the basis of molecular weight distributions of polymers. Zhur. tekhn. fiz. 28 no.11:2487-2492 N '58.

(MIRA 12:1)

(Isoprene) (Polymerization)

AUTHOR: Bresler, S. Ye., Moscovitskiy, M. I. SO, '20-121-5-26 '58

TITLE: Investigation on the Kinetics of Polymerization of Isoprene Under the Action of a Complex Catalyst (Izuchenije kinetiki polimerizatsii izoprena pod deystviyem kompleksnogo katalizatora)

PERIODICAL: Doklady Akademii nauk SSSR, 1958, Vol. 121, Nr 5, pp. 859-861 (USSR)

ABSTRACT: In order to clarify the details of the mechanism of polymerization under the influence of the complexes of organoaluminum compounds with titanium chlorides, informations concerning the problem referred to in the title may be of interest. The previous results concerning the kinetics of the propylene polymerization (Refs 1,2) could be interpreted with difficulty since the polymer is insoluble in the medium of reaction and since it envelops the particles of the catalyst. In the present work the polymerization of isoprene which yields polymers soluble in the monomer (viz. in saturated hydrocarbons and benzene) has been investigated. Figure 1 shows a number of time curves of the polymerization of isoprene under the influence of

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Investigation on the Kinetics of Polymerization of  
Isoprene Under the Action of a Complex Catalyst

SOV/20-121-5-26/50

titanium tetrachloride and aluminum tri-isobutyl (1 : 1) in connection with the preceding formation of an active complex in one of the sectors of the ampoule. The maximum rate of polymerization is achieved immediately after the union of the monomer with the catalyst. The reaction is retarded, as a rule, at rather low degrees of conversion (10 to 20%). This is explained in the best way by the chemical change of the surface of the catalyst or by its contamination by by-products of polymerization. The process of reaction changes considerably by introducing the components of the catalyst separately into the medium of reaction: Polymerization takes place very slowly, and without heat generation within the first 30 to 40 minutes. Heat is even absorbed, viz. most presumably for the formation of the catalytic complex (Fig 2). After that, an almost linear increase in temperature and a corresponding accumulation of polymers takes place. A detailed interpretation of the latter form of polymerization makes additional tests necessary. Consequently, the formation of an active complex must be preceded by a complex dissociation of its components with isoprene.

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Investigation on the Kinetics of Polymerization of  
Isoprene Under the Action of a Complex Catalyst

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N.N. Chesnokova assisted in the work.

There are 2 figures and 3 references, 1 of which is Soviet.

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SPIRIN, A.S.; GAVRILOVA, L.P.; BRESLER, S.Ye.; MOSEVITSKIY, M.I.

Studying the macromolecular structure on infectious ribonucleic acid  
from tobacco mosaic virus. Biokhimiia 24 no.5:938-947 9-0 '59.

(MIRA 13:2)

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(VIRUSES chem.)

(RIBONUCLEIC ACID metab.)

5(5)

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TITLE:

On the Mechanism of Polymerization Under the Effect  
of Metallo-organic Compounds and Their Complexes  
(O mekhanizme polimerizatsii pod deystviyem  
metalloorganicheskikh soyedineniy i ikh kompleksov)

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ABSTRACT:

In this paper the data existing in publications regarding the functional mechanism of metallo-organic and complex polymerization catalysts are discussed. According to Ziegler's assumptions (Refs 1 - 7) also by other authors (Refs 8 - 11) a gradual polymerization takes place under the effect of metallo-organic compounds. By interrupting the polymerization and introducing various monomer quantities intermediate products of different polymerization degrees may be obtained (Refs 3, 5, 10, 12, 13). Another interpretation of the polymerization mechanism in the presence of metallo-organic compounds is based on the fact that the active center is a catalytic complex which contains the metallo-organic initial compound, as well as a "co-catalyst" in the form of molecules of the monomers, of the solvent

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or specially introduced additions. The formation of such complexes has been experimentally proved in many cases. The chemical activity of the metal-carbon bond is presumably caused by its polarity and increases with increasing polarity and decreasing decomposition energy. Under other conditions, especially if a covalent component predominates in the bond, a different kind of complex formation is possible, i. e. a retarded addition to the metal-carbon bond. In this case the decrease of the polarity of the bond is more important than the decrease of its energy. A coordination with esters and other electron-donating substances in solution is one of the numerous cases where complexes are formed which influence the polymerization with participation of metallo-organic compounds. The so-called "Alphyn catalyst" (Refs 24 - 30) may serve as a further example for the significance of complex formation during the polymerization process. The catalyst is formed by the interaction of at least three components which contain alkali metal (e. g. sodium). Many problems with regard to its function mechanism are still unexplained. But there is no doubt that in this case

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the heterogeneity of the process is very important. The extremely interesting and important properties of the Alkyl catalyst are to a much greater extent characteristic of the complex catalyst discovered by Ziegler and his co-workers (Ref 32). The reaction product from titanium chloride and triethyl aluminum is the classical example of such a complex catalyst. The universal character of complex catalysts is remarkable. Polymers could be obtained by them even if all other methods failed. The principle of their preparation is also universal. Despite of great differences all representatives of complex catalysts have a main characteristic in common: the catalyst is formed because of an interaction of two metal compounds. One of them is the compound of transition metals of group 4 - 6 of the periodical system, the other usually is an organic compound of metals of group 1 - 3. At present the publications contain a great number of prescriptions for complex catalysts. Despite of the diversity of the used compounds they are in accordance with the principle

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